CALIFORNIA SWAINSON'S THRUSH (*Catharus ustulatus oedicus*)

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Criteria Scores

Catharus ustulatus oedicus

Population Trend	Range Trend	Population Size	Range Size	Endemism	Population Concentration	Threats
5	10	2.5	5	10	0	10

Special Concern Priority

Currently considered a Bird Species of Special Concern (breeding), Priority 3. No subspecies were included on the original list (Remsen 1978), and this subspecies was not included on CDFG's (1992) list.

Breeding Bird Survey Statistics for California

1966-1999					1966-1979			1980-1999			
Trend	*P*	*n*	(95% CI)	R.A.	Trend	*P*	*n*	Trend	*P*	*n*	**Credibility**
-1.4	0.08	40	-2.9, 0.1	2.17	-2.1	0.47	30	-0.8	0.39	30	**High**

The Swainson's thrush is well sampled by the Breeding Bird Survey (BBS), and results from 1966 to 1999 show a marginally significant population decline in California (Sauer et al. 2000). Note that the BBS data do not distinguish to the level of subspecies. However, the majority of BBS routes in California are within the range of the California Swainson's thrush (see Sauer et al. 2000 for route locations).

General Range and Abundance

The California Swainson's thrush is endemic to California, breeding on the west slope of the Sierra Nevada range west and south along the coast for the entire length of the state (Phillips 1991, AOU 1998). This subspecies is most abundant in coastal streams in central and northern California (Sauer et al. 2000, T. Gardali pers. obs.).

Seasonal Status in California

Occurs as a migrant and summer resident from late-April to mid-October; breeding season from late April to early August.

Historical Range and Abundance in California

Grinnell and Miller (1944) recognized only two subspecies in California, *C. u. ustulata* (includes current range *C. u. oedicus*) and *C. u. almae* (synonymized as *C. u. swainsoni*). The historic range of *C. u. oedicus* includes the entire length of the state along the coast, the Sacramento and San Joaquin valleys, west of Sierra Nevada axis and desert divides (Grinnell and Miller 1944, Evans Mack and Yong 2000). It is unlikely, however, that the California Swainson's thrush ever bred in the Central Valley as no confirmed breeding records exist there (WFVZ, CAS, MVZ, SBMNH egg set data) and this species, in general, appears tied to relatively cool moist shady habitats for breeding (Evans Mack and Yong 2000). In Marin County, for example, the limit of the inland breeding distribution paralleled that of the coastal summer fogs (Shuford 1993).

Grinnell and Miller (1944) described populations on the west slope of Sierra Nevada as "common to abundant." No quantitative estimates of historic abundance exist.

Recent Range and Abundance in California

Breeds from Mendocino County south along the coast for the entire length of state primarily limited to coastal streams but can be found locally in San Gabriel and western San Bernadino mountains. Also breeds in Klamath and Cascade mountains in the north and locally along west slope of Sierra Nevada from Plumas County south to Sierra County, and extremely locally in Yosemite Valley. Reportedly extirpated from the Central Valley (but see above) and central and southern Sierra Nevada (Beedy and Granholm 1985, Marshall 1988, Evans Mack and Yong 2000).

BBS shows slight decline for this species (see above) and this result is supported by significant declines reported in numbers of spring migrants at Southeast Farallon Island (SEFI) from 1968 to 1992 (Pyle et al. 1994). In this same study, however, numbers of fall migrants increased significantly likely representing different occurrence patterns of subpopulations through SEFI.

Additionally, subspecies identity in both seasons is unknown at SEFI. Year-round mist-netting data from coastal Marin County show that populations of the California Swainson's thrush appear stable during the breeding season from 1980 to 1994 (Johnson and Geupel 1996) and during autumn migration from 1979 to 1999 (PRBO unpubl. data). Reported to have declined substantially in Southern California (Garrett and Dunn 1981).

Where this subspecies remains relatively common, breeding densities can be high. In coastal Marin County, for example, there were approximately 18 breeding territories along a 900 m (entire plot size = 4.22 ha) stretch of creek in 2001 (PRBO unpubl. data).

Ecological Requirements

C. u. oedicus primarily breeds in riparian habitats that are cool, moist, and shady preferring willow-alder (*Salix-Alnus*) riparian areas along the coast (sea level to 150 m) and mountain riparian thickets, wet montane meadows, and aspen (*Populus*) forests in the Sierra Nevada (1400 to 2600 m; Verner and Boss 1980, Unitt 1984, Shuford 1993). This subspecies' breeding season affinity for riparian areas apparently differs from other subspecies (primarily riparian vs. primarily coniferous; Evans Mack and Yong 2000). The presence of water, a dense plant understory, and substantial canopy cover are necessary elements. Mud is present for construction of nests. Although not documented, there may exist some moisture and/or temperature gradient that corresponds to this thrush's breeding requirements and distribution (i.e., hot and dry areas are not suitable).

The amount of canopy cover is an important element of the California Swainson's thrushes breeding habitat. In coastal Marin County, canopy cover over 64 nests averaged 71% and their presence and nest success were both significantly positively correlated with closed canopy cover (PRBO unpubl. data, Gardali et al. 1999, Holmes et al. 1999). Dense understory vegetation is another important element and is used to place and conceal nests. Nests are typically placed below 2 m in California (PRBO unpubl. data, Evans Mack and Yong 2000). Abundant fruit producing understory plant species may also be important for the survival of post-fledging juveniles (J. D.

White pers. comm.). Additionally, nestlings are frequently fed fruit (T. Gardali pers. obs.). Non-riparian upland habitats adjacent to nesting habitats may be important to post-fledging juveniles for forage and cover (J. D. White pers. comm.).

Johnson and Geupel (1996) showed that population numbers of this subspecies are primarily influenced by reproductive output, based on a significant positive correlation between the number of young produced in any given year and the number of adults recruiting into the population the following year. Marshall (1988) speculated that winter season habitat loss and degradation was responsible for the disappearance of this subspecies from parts of the Sierra Nevada. Brown-headed cowbird (*Molothrus ater*) parasitism has been implicated in contributing to the decline of this subspecies in Southern California (Garrett and Dunn 1981). However, this implication is likely erroneous because the Swainson's thrush is an uncommon host in California as well as throughout its entire range (Evans Mack and Yong 2000). For example, in coastal Marin County, where parasitism rates for some species can be high, only 4 of 256 Swainson's thrush nests were parasitized from 1995-2001 (PRBO unpubl. data).

Threats

The continued loss and degradation of riparian habitat is likely the primary threat to the California Swainson's thrush. Any process that diminishes understory vegetation over a prolonged period (e.g., grazing, invasive plant species) and causes wet meadows or streams to dry-up (over-grazing, water diversion) may render an area unsuitable for breeding. Because reproductive success may be an important determinant of population dynamics for this thrush (Johnson and Geupel 1996), and the fact that reproductive success can be very low in coastal California (Gardali et al. 1999) and throughout the West (Evans Mack and Yong 2000), indicates that high rates of nest depredation are a threat. Levels of nest depredation may be inflated by habitat conversion that benefits both native and non-native nest predators.

Winter season, and perhaps migratory season, circumstances are also likely threats to this subspecies but more study is sorely needed (see below).

Management and Research Recommendations

- protect suitable riparian habitats.
- restore native understory plant species to create moderate to dense thickets; native fruit-bearing species may be an important component.
- restore upland habitats adjacent to riparian breeding areas.
- initiate studies that estimate reproductive success throughout range; nest survival as well as post-fledging juvenile survival.
- initiate studies on the identity and ecology of nest predators within various habitat types to make clear the most effective management options for increasing reproductive output.
- initiate intensive studies on all aspects of wintering ecology; in particular, gather data on site-fidelity, habitat requirements, territoriality, and fitness by habitat type.

Monitoring Needs

Statewide, BBS appears suitable for monitoring breeding populations. BBS data, however, are too few to adequately monitor populations in the Sierra Nevada and currently only 4 routes are censused annually there (Sauer et al. 2000). It is unlikely that addition of more BBS routes in the Sierra would be sufficient to monitor this population because BBS surveys are "roadside" while Swainson's thrush habitats are often away from roads.

Annual monitoring that indexes breeding population size, reproductive success, and adult survival should be conducted in at least one site each in the Sierra, Northern, Central, and Southern California regions.

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